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EXAMINER	
NGUYEN, STEVE N	
ART UNIT	**PAPER NUMBER**
2133	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,848	RAJALA ET AL.	
	Examiner	Art Unit	
	Steve Nguyen	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5,8-11,15,18-22,24,27,31,34-36,38,41,42 and 49-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,8-11,15,18-22,24,27,31,34-36,38,41,42,49 and 50* is/are rejected.

7)☒ Claim(s) *11 and 51-54* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 5, 8-11, 15, 18-22, 24, 27, 31, 34-36, 38, 41-42, and 49-54 are pending. Claims 2-4, 6-7, 12-14, 16-17, 23, 25-26, 28-30, 32-33, 37, 39-40, 43-45, and 47-48 have been cancelled.

Specification

2. In view of the amendment filed 4/18/2005, the Examiner withdraws all objections to the abstract.

Claim Rejections - 35 USC § 112

3. Claims 4-5, 8-9, 18-19, 21-27, 36-41, and 43-50 rejected under 35 USC 112, second paragraph as being indefinite. In view of the amended claims filed 4/18/2005, these rejections are withdrawn.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 5, 11, and 15 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

5. Claims 51-54 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Objections

6. Claim 11 objected to because of the following informalities: Claim 11 recites the limitation, "polling for transmission of an acknowledgement message when the count value exceeds the predetermined threshold value". Applicant may have intended: "transmitting an acknowledgement message when the count value exceeds the predetermined threshold value", as disclosed by the Applicant's remarks on page 16. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 5 recite the limitation "when said count value exceeds a predetermined threshold value" in limitation (d). There is insufficient antecedent basis for this limitation in the claim. The "said count value" recited in the claims is assumed to be a result of counting the number of data units that have been successfully received in claim 1, and counting the number of unacknowledged data units in claim 5.

8. Claims 11 and 15 recite the limitation "receiving said count value and comparing said count value to a predetermined threshold value". There is insufficient antecedent basis for this limitation in the claim. The "said count value" recited in the claims is assumed to be a result of the counting unit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Crisler et al (US. Pat. 5,477,550) in view of Stevens in view of Lepitre et al (US Pat. 5,524,122) in view of Ayanoglu et al (European Pat. EP 0 695 053 A2).

As per claim 1:

Crisler et al (hereafter referred to as Crisler) teaches an error control method for a transmission channel (column 3, lines 1-5) wherein a transmission of data units via

said transmission channel is controlled in dependence on the sequence number (column 3, lines 6-9) of a preceding data unit not yet acknowledged (column 3, lines 11-19).

Not explicitly disclosed by Crisler are the steps of:

- Defining a transmit window based on said sequence number of said unacknowledged preceding data unit;
- Allowing the transmission of a data unit only if the sequence number of said data unit lies within said transmit window;

Stevens, in an analogous art, teaches a protocol comprising:

- Defining a transmit window based on said sequence number of said unacknowledged preceding data unit (page 280, section 20.3, paragraph 1);
- Allowing the transmission of a data unit only if the sequence number of said data unit lies within said transmit window (page 280, section 20.3, paragraph 1; Figure 20.4 shows that packets 10 and 11 can not be sent because it is not in the window);

Therefore, it would have been obvious to a person in the art at the time the invention was made to combine the method of Crisler with that of Stevens. This modification would have been obvious because a person having ordinary skill in the art at the time the invention was made would have been motivated to do so since Crisler states that the method is based on a sliding window protocol in column 2, line 67 and the method of Stevens describes a sliding window TCP protocol.

Also not explicitly disclosed is: estimating a transmission quality of said transmission channel by detecting a data unit erasure or loss at the receiving end of said transmission channel; and changing the transmission rate of acknowledgment messages in response to the detection of a data unit erasure or loss at the receiving end of said transmission channel.

However, Lepitre et al (hereafter referred to as Lepitre) teaches:

- estimating a transmission quality of said transmission channel by detecting a data unit erasure or loss at the receiving end of said transmission channel (col. 2, lines 49-56; a loss must occur in order to obtain an error ratio); and
- changing the transmission rate of acknowledgment messages in response to the detection of a data unit erasure or loss at the receiving end of said transmission channel (col. 2, lines 34-39; abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the adaptive system of Lepitre to determine an initial transmission rate in the system of Crisler. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the transmission system of Lepitre would have provided the advantage of adopting an initial transmission rate that is close to the optimum rate, detailed by Lepitre in the abstract.

Also not explicitly disclosed is said step of changing including the steps of: counting the number of data units which have been successfully received; transmitting an acknowledgement message when said count value exceeds a predetermined threshold

value; and one of increasing the count value by a predetermined value and decreasing said predetermined threshold value when a data unit erasure or loss has been detected.

Ayanoglu et al (hereafter referred to as Ayanoglu), in an analogous art, teaches a method comprising a counter for counting the number of data units successfully received (column 9, lines 15-21), increasing the counter by a predetermined value when a data unit loss has been detected (column 9, lines 38-40), and transmitting an acknowledgment message when the count value exceeds a predetermined threshold (In column 9, lines 26-30 a flow control process is initiated to prevent the transmitter from transmitting. A signal must be sent out as part of the flow control initiation process to inform the transmitter not to send any more packets.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Ayanoglu in combination with the method of Crisler, Stevens, and Lepitre by including a counter system that keeps track of acknowledged and unacknowledged messages. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using a counter to manage packets provides a way to manage the window size by determining which packets have been acknowledged.

As per claim 5:

Crisler teaches an error control method for a transmission channel (column 3, lines 1-5), wherein a transmission of data units via said transmission channel is controlled in dependence on the sequence number (column 3, lines 6-9) of a preceding

data unit not yet acknowledged (column 3, lines 11-19), said error control method comprising the steps of: changing said transmission rate of said acknowledgement messages in dependence on a retransmission of a negatively acknowledged data unit (Crisler states in column 1, lines 50-55 that if a NACK is returned, the packet is resent. The receiver sends either an ACK or a NACK based on the success of the received packet. If negative acknowledgments are sent, then the transmission rate of the acknowledgment messages is changed since fewer ACKs are being generated due to the presence of NACKs).

Not explicitly disclosed by Crisler are the steps of:

- Defining a transmit window based on said sequence number of said unacknowledged preceding data unit;
- Allowing the transmission of a data unit only if the sequence number of said data unit lies within said transmit window;

Stevens, in an analogous art, teaches a protocol comprising:

- Defining a transmit window based on said sequence number of said unacknowledged preceding data unit (page 280, section 20.3, paragraph 1);
- Allowing the transmission of a data unit only if the sequence number of said data unit lies within said transmit window (page 280, section 20.3, paragraph 1; Figure 20.4 shows that packets 10 and 11 can not be sent because it is not in the window);

Therefore, it would have been obvious to a person in the art at the time the invention was made to combine the method of Crisler with that of Stevens. This modification

would have been obvious because a person having ordinary skill in the art at the time the invention was made would have been motivated to do so since Crisler states that the method is based on a sliding window protocol in column 2, line 67 and the method of Stevens describes a sliding window TCP protocol.

Also not explicitly disclosed is: estimating a transmission quality of said transmission channel by detecting a data unit erasure or loss at the receiving end of said transmission channel; and changing the transmission rate of said acknowledgment messages in dependence on a retransmission of a negatively acknowledged data unit.

However, Lepitre et al (hereafter referred to as Lepitre) teaches:

- estimating a transmission quality of said transmission channel by detecting a data unit erasure or loss at the receiving end of said transmission channel (col. 2, lines 49-56; a loss must occur in order to obtain an error ratio); and
- changing the transmission rate of said acknowledgment messages in dependence on a retransmission of a negatively acknowledged data unit (col. 2, lines 34-39; the transmission rate is changed based on the error rate of the channel, which can be determined by the frequency of negatively acknowledged data units when measuring E(t)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the adaptive system of Lepitre to determine an initial transmission rate in the system of Crisler. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the transmission system

of Lepitre would have provided the advantage of adopting an initial transmission rate that is close to the optimum rate, detailed by Lepitre in the abstract.

Also not explicitly disclosed is said step of changing including: counting the number of unacknowledged data units that have been transmitted; polling for a transmission of an acknowledgment message when said count value exceeds a predetermined threshold value; and one of increasing the count value by a predetermined value and decreasing said predetermined threshold value when it is detected that a negatively acknowledged data unit has been retransmitted.

Ayanoglu, in an analogous art, teaches a method comprising a counter for counting the number of data units successfully received (column 9, lines 15-21), increasing the counter by a predetermined value when a data unit loss has been detected (column 9, lines 38-40), and polling for a transmission of an acknowledgment message from the base station (column 9, lines 3-5 and 31-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Ayanoglu in combination with the method of Crisler, Stevens, and Lepitre by including a counter system that keeps track of acknowledged and unacknowledged messages.

Note: Although the method of Ayanoglu is applied to success acknowledgments, it would have been obvious to use the same method with negative acknowledgments instead by counting the number of unacknowledged data instead of acknowledged data. This would be advantageous in systems that use NACKs instead of ACKs.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using a counter to manage packets provides a way to manage the window size by determining which packets have not been acknowledged.

As per claims 8 and 22:

Crisler, Stevens, Lepitre and Ayanoglu teach the claimed method as detailed above. Ayanoglu does not explicitly state that the predetermined value is adjusted on the basis of the transmission rate of the data, the size of the window, or the round-trip delay of the channel.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the counter of Ayanoglu on the basis of the data transmission rate when a data loss or erasure has been detected. This modification would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the art would have recognized that it would be advantageous to increase the predetermined value in cases where both the transmission rate and round-trip delay is high. Increasing the predetermined value appropriately would cause the cellular computing device of Ayanoglu to reach its threshold faster, thereby temporarily preventing the user from sending additional packets. This offers the advantage of allowing lost or erased packets to be resent in a channel with high delay while proportionately imposing flow control at the user to prevent the transmitting cellular computing device from being overwhelmed by the user.

As per claims 9, 24, and 27:

Crisler, Stevens, Lepitre and Ayanoglu teach the claimed method as detailed above. Ayanoglu teaches the predetermined threshold value defining the window size in lines 24-37 of column 9. Although Ayanoglu does not explicitly mention the predetermined threshold value being adjusted, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method to include an adjustable predetermined threshold value. A person of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to adjust the maximum window size to obtain a more versatile system.

As per claim 11:

Crisler teaches an error control apparatus for performing a control (column 3, lines 1-5) as to allow a transmission of data units via a transmission channel in dependence on the sequence number (column 3, lines 6-9) of a preceding data unit not yet acknowledged (column 3, lines 11-19).

Not explicitly disclosed by Crisler is:

- detecting apparatus for detecting a transmission quality of said transmission channel by detecting data unit erasure or loss at a receiving end of said transmission channel.

Stevens, in an analogous art, teaches a protocol comprising:

- detecting means for detecting a transmission quality of said transmission channel (page 285, section 20.6, paragraph 2 states that TCP observes the rate at which packets should be injected into the network. TCP is estimating channel quality

by observing the rate at which packets should be injected into the network and changing that rate based on the channel quality);

Therefore, it would have been obvious to a person in the art at the time the invention was made to combine the method of Crisler with that of Stevens. This modification would have been obvious because a person having ordinary skill in the art at the time the invention was made would have been motivated to do so since Crisler states that the method is based on a sliding window protocol in column 2, line 67 and the method of Stevens describes a sliding window TCP protocol.

Also not explicitly disclosed is a controller for changing the transmission rate of acknowledgment messages in response to detection of a data unit erasure or loss. However, Lepitre teaches: changing the transmission rate of acknowledgment messages in response to the detection of a data unit erasure or loss (col. 2, lines 34-39; abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the adaptive system of Lepitre to determine an initial transmission rate in the system of Crisler. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the transmission system of Lepitre would have provided the advantage of adopting an initial transmission rate that is close to the optimum rate, detailed by Lepitre in the abstract.

Also not explicitly disclosed is a counting unit for counting the number of data units that are successfully received and outputting a count value; a comparator connected to

said counting unit for receiving said count value and comparing said count value to a predetermined threshold value; and said controller arranged and dimensioned for one of increasing the count value by a predetermined value and decreasing said predetermined threshold value in response to detection of a data unit erasure or loss.

Ayanoglu, in an analogous art, teaches a method comprising a counter for counting the number of data units successfully received (column 9, lines 15-21), increasing the counter by a predetermined value when a data unit loss has been detected (column 9, lines 38-40; a comparing means must be present in order to decide on whether the counter has exceeded the threshold), and transmitting an acknowledgment message when the count value exceeds a predetermined threshold (In column 9, lines 26-30 a flow control process is initiated to prevent the transmitter from transmitting. A signal must be sent out as part of the flow control initiation process to inform the transmitter not to send any more packets).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Ayanoglu in combination with the method of Crisler and Lepitre by including a counter system that keeps track of acknowledged and unacknowledged messages. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using a counter to manage packets provides a way to manage the window size by determining which packets have been acknowledged.

As per claim 15:

Crisler teaches an error control apparatus (column 3, lines 1-5) for performing a control so as to allow a transmission of data units via a transmission in dependence on the sequence number (column 3, lines 6-9) of a preceding data unit not yet acknowledged (column 3, lines 11-19).

Not explicitly disclosed by Crisler is:

- detecting apparatus for detecting a transmission quality of said transmission channel by detecting a negative acknowledgement message received at a transmission end of said transmission channel; and
- a controller for changing the transmission rate of acknowledgment messages in response to the retransmission of a negatively acknowledged data unit.

However, Lepitre et al (hereafter referred to as Lepitre) teaches:

- detecting apparatus for detecting a transmission quality of said transmission channel by detecting a negative acknowledgement message received at a transmission end of said transmission channel (col. 2, lines 49-56; a loss must occur in order to obtain an error ratio. The channel quality is determined based on the error rate of the channel, which can be determined by the frequency of negatively acknowledged data units when measuring E(t)); and
- changing the transmission rate of said acknowledgment messages in dependence on a retransmission of a negatively acknowledged data unit (col. 2, lines 34-39).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the adaptive system of Lepitre to determine an

initial transmission rate in the system of Crisler. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the transmission system of Lepitre would have provided the advantage of adopting an initial transmission rate that is close to the optimum rate, detailed by Lepitre in the abstract.

Also not explicitly disclosed is: a counting unit for counting the number of unacknowledged data units that are transmitted and outputting a count value; a comparator connected to said counting unit for receiving said count value and comparing said count value to a predetermined threshold value; and a controller arranged and dimensioned for one of increasing the count value by a predetermined value and decreasing said predetermined threshold value in response to retransmission of a negatively acknowledged data unit and polling for transmission of an acknowledgement message when the count value exceeds the predetermined threshold value.

Ayanoglu, in an analogous art, teaches a method comprising a counter for counting the number of data units successfully received (column 9, lines 15-21), increasing the counter by a predetermined value when a data unit loss has been detected (column 9, lines 38-40; a comparing means must be present in order to decide on whether the counter has exceeded the threshold), and polling for a transmission of an acknowledgment message from the base station (column 9, lines 3-5 and 31-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Ayanoglu in combination with the

method of Crisler, Stevens, and Lepitre by including a counter system that keeps track of acknowledged and unacknowledged messages.

Note: Although the method of Ayanoglu is applied to success acknowledgments, it would have been obvious to use the same method with negative acknowledgments instead by counting the number of unacknowledged data instead of acknowledged data. This would be advantageous in systems that use NACKs instead of ACKs.
This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using a counter to manage packets provides a way to manage the window size by determining which packets have not been acknowledged.
As per claims 18 and 36:

Crisler, Lepitre, and Ayanoglu substantially teach the claimed apparatuses as detailed above. Ayanoglu does not explicitly state that the controller is arranged to adjust the predetermined value on the basis of the transmission rate of the data, the size of the window, or the round-trip delay of the channel.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the counter of Ayanoglu on the basis of the data transmission rate when a data loss or erasure has been detected. This modification would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the art would have recognized that it would be advantageous to increase the predetermined value in cases where both the transmission rate and round-trip delay is high. Increasing the predetermined value

appropriately would cause the cellular computing device of Ayanoglu to reach its threshold faster, thereby temporarily preventing the user from sending additional packets. This offers the advantage of allowing lost or erased packets to be resent in a channel with high delay while proportionately imposing flow control at the user to prevent the transmitting cellular computing device from being overwhelmed by the user.

As per claims 19, 38, and 41:

Crisler, Lepitre, and Ayanoglu teach the claimed apparatuses as detailed above. Ayanoglu teaches the predetermined value defining the window size in lines 24-37 of column 9. Although Ayanoglu does not explicitly mention the predetermined value being adjusted by the controler, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method to include an adjustable predetermined value. A person of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to adjust the maximum window size to obtain a more versatile system.

As per claim 20:

Crisler, Lepitre, and Ayanoglu teach the claimed apparatus as detailed in above but do not explicitly disclose a polling bit set in the header of the data unit to be transmitted. However, Stevens teaches an optional block in the header of a data unit on page 34, Figure 3.1.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a polling bit in the header of a data unit. One of ordinary skill in the art at the time the invention was made would have been

motivated to do so since an optional block in the data unit header is available for an extra bit and channel resources would be used more efficiently by including the polling bit with the header instead of sending it separately as disclosed by Stevens on page 265, section 19.3, paragraph 2.

As per claim 42:

Crisler, Lepitre, and Ayanoglu teach the claimed method as detailed above but do not explicitly disclose a polling bit set in the header of the data unit to be transmitted. However, Stevens teaches an optional block in the header of a data unit on page 34, Figure 3.1.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a polling bit in the header of a data unit. One of ordinary skill in the art at the time the invention was made would have been motivated to do so since an optional block in the data unit header is available for an extra bit and channel resources would be used more efficiently by including the polling bit with the header instead of sending it separately as disclosed by Stevens on page 265, section 19.3, paragraph 2.

10. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Crisler in view of Stevens in view of Lepitre in view of Ayanoglu as applied to claim 1 above, and further in view of Rathonyi et al (US. Pat. 6,359,877).

As per claim 10:

Crisler, Stevens, Ayanoglu and Lepitre teach the claimed method as detailed in claim 1 above. However, Crisler does not explicitly disclose the transmission channel being an RLC connection for transmitting RLC data blocks in an uplink or downlink direction of a GPSR network. Rathonyi et al, in an analogous art, states that GPRS is the packet mode for the Global System for Mobile Communication (GSM) standard and is designed to allow a single user to occupy more than one transmission resource simultaneously (column 2, lines 21-25). Rathonyi et al further states in lines 59-64 of column 5 that RLC blocks are used to provide efficient transmission on the radio interface.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of Crisler, Stevens, Ayanoglu and Lepitre to a RLC connection in a GPRS network. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because one of ordinary skill in the art would have recognized that it would be advantageous to apply an error control method to a transmission channel in which an RLC connection of a GPRS network is used. RLC provides the advantages of efficient transmission in a GPRS network, and GPRS is the packet mode used in a standardized global communication system.

As per claim 21:

Crisler and Lepite teach the claimed apparatus above. However, Crisler does not explicitly disclose the apparatus being arranged in a mobile station or a network element of a GPRS network. Rathonyi et al, in an analogous art, states that GPRS is

the packet mode for the Global System for Mobile Communication (GSM) standard and is designed to allow a single user to occupy more than one transmission resource simultaneously (column 2, lines 21-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of Crisler and Lepitre to a network element of a GPRS network. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because one of ordinary skill in the art would have recognized that GPRS offers the advantages of allowing a single user to occupy more than one transmission resource simultaneously and that the application of an error control method would make it more reliable.

As per claims 31, 34, and 35:

Crisler, Ayanoglu and Lepitre teach the claimed method as detailed above. However, Crisler does not explicitly disclose the transmission channel being an RLC connection for transmitting RLC data blocks in an uplink or downlink direction of a GPSR network. Rathonyi et al, in an analogous art, states that GPRS is the packet mode for the Global System for Mobile Communication (GSM) standard and is designed to allow a single user to occupy more than one transmission resource simultaneously (column 2, lines 21-25). Rathonyi et al further states in lines 59-64 of column 5 that RLC blocks are used to provide efficient transmission on the radio interface.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of Crisler and Stevens to a RLC connection in a GPRS network. One of ordinary skill in the art at the time the invention

was made would have been motivated to do so because one of ordinary skill in the art would have recognized that it would be advantageous to apply an error control method to a transmission channel in which an RLC connection of a GPRS network is used. RLC provides the advantages of efficient transmission in a GPRS network, and GPRS is the packet mode used in a standardized global communication system.

As per claims 46, 49 and 50:

Crisler, Lepitre, and Ayanoglu teach the claimed apparatus as detailed above. However, Crisler does not explicitly disclose the apparatus being arranged in a mobile station or a network element of a GPRS network. Rathonyi et al, in an analogous art, states that GPRS is the packet mode for the Global System for Mobile Communication (GSM) standard and is designed to allow a single user to occupy more than one transmission resource simultaneously (column 2, lines 21-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of Crisler and Stevens to a network element of a GPRS network. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because one of ordinary skill in the art would have recognized that GPRS offers the advantages of allowing a single user to occupy more than one transmission resource simultaneously and that the application of an error control method would make it more reliable.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Nguyen whose telephone number is (571) 272-7214. The examiner can normally be reached on M-F, 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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